MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

BFN3154 – ADVANCED TOPICS IN FINANCE

(All sections / Groups)

19 OCTOBER 2016
2.30 p.m – 4.30 p.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **SEVEN (7)** printed pages with **TWO (2)** sections.
2. Answer **ALL** questions in Section A and B. Marks are shown at the end of each question.
3. Please write your answers for Section A and B in the answer booklet.

SECTION A (40 marks): Choose the best answer. Each question carries 2 marks.

1. In a macro-economic based risk factor model the following factor would be one of many appropriate factors:
a. Confidence risk.
b. Maturity risk.
c. Expected inflation risk.
d. Call risk.
e. Return difference between small capitalization and large capitalization stocks.

3. Fama and French suggest a three factor model approach. Which of the following is **not** included in their approach?
a. Excess returns to a broad market index
b. Return differences between small-cap and large-cap portfolios
c. Return differences between industry characteristics
d. Return differences between value and growth stocks
e. Both c and d

3. With a continuous probability distribution,:
a. probability is assigned to each possible outcome.
b. possible outcomes are constantly changing.
c. an infinite number of possible outcomes exist.
d. there is no variance.
e. All of the above

4. The expected value is the:
a. inverse of the standard deviation
b. correlation between a security's risk and return.
c. weighted average of all possible outcomes.
d. same as the discrete probability distribution.
e. All of the above

5.----------is concerned with the interrelationships between security returns as well as the expected returns and variances of those returns.
a. random diversification.
b. correlating diversification
c. Friedman diversification
d. Markowitz diversification
e. All of the above

Continued...

6. Which of the following would be considered a random variable:
a. expected value.
b. correlation coefficient between two assets
c. one-period rate of return for an asset.
d. beta.
e. All of the above

7. Given the following probability distribution, calculate the expected return of security XYZ.

Security XYZ's

Potential return	Probability
20%	0.3
30%	0.2
-40%	0.1
50%	0.1
10%	0.3

a. 16 percent
b. 22 percent
c. 25 percent
d. 18 percent
e. All of the above

8. In a multifactor model, confidence risk represents
a. Unanticipated changes in the level of overall business activity.
b. Unanticipated changes in investors' desired time to receive payouts.
c. Unanticipated changes in short term and long term inflation rates.
d. Unanticipated changes in the willingness of investors to take on investment risk.
e. None of the above.

9. In a multifactor model, time horizon risk represents
a. Unanticipated changes in the level of overall business activity.
b. Unanticipated changes in investors' desired time to receive payouts.
c. Unanticipated changes in short term and long term inflation rates.
d. Unanticipated changes in the willingness of investors to take on investment risk.
e. None of the above.

10. Portfolio risk is most often measured by professional investors using the:
a. expected value
b. portfolio beta
c. weighted average of individual risk
d. standard deviation
e. None of the above.

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11. Investigators have tested the strong form EMH by examining the performance of the following type of investor:
a. Corporate insiders.
b. Stock exchange specialists.
c. Security analysts.
d. Professional money managers.
e. All of the above.

12. According to the strong-form efficient market hypothesis, stock prices fully reflect
a. All security market information only.
b. All public information only.
c. All public and private information only.
d. All of the above.
e. None of the above.

13. All of the following are underlying assumptions of the capital asset pricing model (CAPM) **except**:
a. A large number of profit-maximizing participants analyze and value securities.
b. New information enters the market in a random fashion
c. Security prices adjust rapidly to reflect the effect of new information
d. Expected returns implicit in the current price of the security reflect its risk
e. All of the above are assumptions of the CAPM

14. In a two stock portfolio, if the correlation coefficient between two stocks were to decrease over time, everything else remaining constant, the portfolio's risk would
a. Decrease.
b. Remain constant.
c. Increase.
d. Fluctuate positively and negatively.
e. Be a negative value.

15. The Markowitz model is based on several assumptions regarding investor behavior. Which of the following is not such any assumption?
a. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period.
b. Investors maximize one-period expected utility.
c. Investors estimate the risk of the portfolio on the basis of the variability of expected returns.
d. Investors base decisions solely on expected return and risk.
e. None of the above (that is, all are assumptions of the Markowitz model)

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16. A positive covariance between two variables indicates that
a. the two variables move in different directions.
b. the two variables move in the same direction.
c. the two variables are low risk.
d. the two variables are high risk.
e. the two variables are risk free.

17. Which of the following statements about the risk-free asset is correct?
a. The risk-free asset is defined as an asset for which there is uncertainty regarding the expected rate of return.
b. The standard deviation of return for the risk-free asset is equal to zero.
c. The standard deviation of return for the risk-free asset cannot be zero, since division by zero is undefined.
d. Choices a and b.
e. Choices a and c.

18. What does $W_{RF} = -0.50$ mean?
a. The investor can borrow money at the risk-free rate.
b. The investor can lend money at the current market rate.
c. The investor can borrow money at the current market rate.
d. The investor can borrow money at the prime rate of interest.
e. The investor can lend money at the prime rate of interest.

19. When identifying undervalued and overvalued assets, which of the following statements is false?
a. An asset is properly valued if its estimated rate of return is equal to its required rate of return.
b. An asset is considered overvalued if its estimated rate of return is below its required rate of return.
c. An asset is considered undervalued if its estimated rate of return is above its required rate of return.
d. An asset is considered overvalued if its required rate of return is below its estimated rate of return.
e. None of the above (that is, all are true statements)

20. Unlike the capital asset pricing model, the arbitrage pricing theory requires only the following assumption(s):
a. A quadratric utility function.
b. Normally distributed returns.
c. The stochastic process generating asset returns can be represented by a factor model.
d. A mean-variance efficient market portfolio consisting of all risky assets.
e. All of the above

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SECTION B (60 marks).

Question 1

a) The followings are the monthly returns of Dow Jones Index and KLCI for a year period.

2016	Dow Jones Index	KLCI
January	4.5	2.33
February	-5.2	0.43
March	6.03	-0.85
April	2.04	2.21
May	-9.23	1.88
June	-5.24	1.98
July	8.5	0.68
August	-6.8	2.01
September	7.11	0.02
October	3.81	-0.16
November	0.01	-0.7
December	6.68	-1.8

i) Calculate mean for both indices.

(2 marks)

ii) Covariance between the rates of return of both indices.

(12 marks)

b) As the new fund manager in O-Securities, you are concerned with the level of risks of both of the stocks invested by O-securities. As the manager you are required to calculate the correlation coefficient of the stocks and the portfolio standard deviation, if the covariance of the stocks is 0.009, the standard deviation of the first stock is 15% and the standard deviation of the second stock is 20%?

(6 marks)

(Total: 20 marks)

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Question 2

a) i) Three stocks (A, B, C) and two common systematic risk factors have the following relationship (Assume $\lambda_0=0$). If $\lambda_1=5\%$ and $\lambda_2=6\%$, calculate expected return on these stocks if the equation is given as below:

$E(R_A)=(0.8)\ \lambda_1 + (0.9)\ \lambda_2$

$E(R_B)=(-0.2)\ \lambda_1 + (1.3)\ \lambda_2$

$E(R_C)=(1.8)\ \lambda_1 + (0.5)\ \lambda_2$

(3 marks)

ii) Given the expected return of the shares one year later are as in part (i) and the firms do not pay a dividend, calculate the estimated price of the shares one year later. Assume that all three stocks are currently priced at RM 37.

(4.5 marks)

iii) Assume the actual prices of stocks A, B, and C will be RM38.20, RM39.80, and RM42.50 one year later, then arbitrage trading will lead to new current prices. Calculate these new current prices after arbitrage opportunities disappear and explain how investors can earn return from this price differences.

(8.5marks)

b) Explain the differences CAPM and APT and discuss how these model is used as asset pricing model

(4 marks)

(Total: 20 marks)

Question 3

a) Based on the table below discuss the meaning of Breusch-Pagan / Cook-Weisberg tests and the outputs given.

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View | Proc | Object | Print | Name | Freeze | Estimate | Forecast | Stats | Resids

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	5.397259	Prob. F(1,27)	0.0279
Obs*R-squared	4.831289	Prob. Chi-Square(1)	0.0279
Scaled explained SS	4.695572	Prob. Chi-Square(1)	0.0302

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 22/02/12 Time: 12:15
Sample: 2004M10 2007M02
Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.60E-07	1.76E-07	-0.909572	0.3711
WIN2000	3.99E-06	1.72E-06	2.323200	0.0279

R-squared	0.166596	Mean dependent var	2.26E-07
Adjusted R-squared	0.135729	S.D. dependent var	3.33E-07
S.E. of regression	3.09E-07	Akaike info criterion	-27.07455
Sum squared resid	2.58E-12	Schwarz criterion	-26.98026
Log likelihood	394.5810	Hannan-Quinn criter.	-27.04502
F-statistic	5.397259	Durbin-Watson stat	1.714717
Prob(F-statistic)	0.027944		

(7 marks)

b)

i) What is panel regression and how you can use panel regression in research?

(5 marks)

ii) Discuss the difference between fixed effect and random effect regression and how to decide the appropriateness of using fixed or random effect regression?

(5 marks)

iii) How to decide between random effect and fixed effect analysis in research?

(3 marks)

(Total: 20 marks)

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